



Webinar Questions and Answers

Mold and Moisture Control in Schools: Potential Health Effects and Safe Clean-Up Practices

Q: If a school wanted to set up a preventive program for mold and moisture, what would be the process and first steps?

- First, find someone to be the coordinator. This person can have experience or be willing to learn. Try to get buy-in from top administrators.
- Use the EPA *IAQ Tools for Schools* [guidance](#).
- Start an inspection process that will fit your time and need.
- Once you know the particular concerns for the building or area, involve others for guidance and problem solving.
- Include training to address needs – the *IAQ Tools for Schools* [checklist](#) is a good starting point.

Q: What criteria did you use to close the school in your school district?

The school was closed during the year due to unresolved and numerous (adult) health and community complaints. The school was built in 1978 with an open concept design and atrium access.

Q: Can you direct us to any guidelines or regulations to determine what is an "acceptable level" of mold spores in a school space for it to be deemed safe and healthy for students.

Standards or Threshold Values for airborne concentrations of mold, or mold spores, have not been set. Currently, there are no EPA regulations or standards for airborne mold contaminants. In general, EPA does not recommend sampling for mold. In most cases, if visible mold growth is present any moisture problems need to be fixed and the mold cleaned up. Since no EPA or other federal limits have been set for airborne mold or mold spores, sampling cannot be used to check a building's compliance with federal mold standards. Surface sampling may be useful to determine if an area has been adequately cleaned or remediated. Sampling for mold should be conducted by professionals who have specific experience in designing mold sampling protocols, sampling methods, and interpreting results. Sample analysis should follow analytical methods recommended by the American Industrial Hygiene Association (AIHA), the American Conference of Governmental Industrial Hygienists (ACGIH), or other professional organizations.

Q: With fans set to auto only, how do you assure proper outside air delivery to each person? If temperature is acceptable most of the time, there won't be enough outside air exchange.

In the humid south, the only time we run into that problem is when the temperature is in the mid-sixties, causing the A/C to not run. Teachers either manually manipulate the controls, or with extra security, open doors.

Q: Is there a document that explains with drawings, construction details to avoid mold?

All of our [Katy Independent School District] new construction has detailed waterproofing, thru-wall details, window dams, door details and roof/curb drawings. The detail of the building envelop can be impressive, but the installation method is just as important.

Q: In portable classrooms, in the summer time, what would be best, turn off the HVAC unit completely or leave it running at a set temp?

We run the A/C on portables during the summer on a set-back schedule to move air and to keep the temperatures around 85 F in the heat of the day.

Q: Are the contractors applying fungicides or disinfectants? And are they certified applicators?

We [Katy Independent School District] have an in house program and do not use fungicide or disinfectants specifically for mold. We do not use bleach for any cleaning except where required by statute (which is in our cosmetology department). When we contract work, it is typically to remove and renovate.

Q: What's the difference between mold and mildew?

Molds include all species of microscopic fungi. Molds include all species of microscopic fungi that grow in the form of multicellular filaments, called hyphae. Molds can thrive on any organic matter, including clothing, leather, paper, and the ceilings, walls and floors of homes with moisture management problems. Mildew refers to certain kinds of mold or fungus. The term mildew is often used generically to refer to mold growth, usually with a flat growth habit. Mildew often lives on shower walls, windowsills, and other places where moisture levels are high.

Q: Where do I get information on the correct cleaning methods and products for cleaning up mold?

US EPA Guidance for Schools and Commercial Buildings. You can download a PDF version from here http://www.epa.gov/mold/mold_remediation.html

Q: My understanding is that only black mold is hazardous and even then only when it has developed into 3-D mold including "stalks" that develop and release the spores that irritate humans. Is this accurate?

Many molds, not just “black molds” have the potential to cause health problems. Molds can produce allergens (substances that can cause allergic reactions), irritants, and in some cases, potentially toxic substances (mycotoxins). Inhaling or touching mold or mold spores may cause allergic reactions in sensitive individuals. Allergic responses include hay fever-type symptoms, such as sneezing, runny nose, red eyes, and skin rash (dermatitis). Allergic reactions to mold are common. They can be immediate or delayed. Molds can also cause asthma attacks in people with asthma who are allergic to mold. In addition, mold exposure can irritate the eyes, skin, nose, throat, and lungs of both mold-allergic and non-allergic people. Symptoms other than the allergic and irritant types are not commonly reported as a result of inhaling mold. Research on mold and health effects is ongoing.

Q: For ocean coastal communities, does the salinity in the air/near water encourage or deter how effectively the ambient humidity will create mold on sheetrock and carpeting?

Salinity can impact some but not all molds and their growth patterns. The particular impact on any material or space is dependent on several factors including environmental conditions, time, type of material and the specific scenario of interest.

Q: In the summer our schools are mostly unoccupied. AC is set to 80°F. This is constantly the blame for mold growth. Should temperatures be maintained at occupied level of 74°F?

My [Peggy Caruso] personal guess is that it is not the cause for mold. You must have water intrusion or high humidity from some source, or you have spills or food that has not been cleaned up.

Q: When and how do you notify parents if you find mold damage in a school or classroom?

You will not have mold damage with a progressive preventive maintenance program. We would not treat mold any different than other preventive maintenance or large scale renovations that we do. All building will have mold either from moisture, outside air, or tracked in from outside – mold is unavoidable.

Q: When performing the periodic checks of the moisture levels in drywall, studs, etc., what is the target moisture level? What is too much?

We [Katy Independent School District] use the Tramex moisture meter. If the instrument is set on the appropriate material, the meter chart indicates unacceptable relative moisture; so we use manufacturer recommendations. When we encounter water damage, our practice is to remove material with moisture and we determine at that time how much dry material will be removed with the moist.

Q: Do you recommend an active solution to improve air quality, sanitise air, kill germs, and kill odors? The mold issue is clearly a major concern; however, even when that is not present other factors are at play?

We consider the source and recommended air exchange rates. The only time air scrubbers are used is when there is a fire, smoke, or some accidental release.

Q: What are some other options besides dedicated outdoor air systems to reduce humidity loads in a building even when HVAC systems are sized properly and run time optimized?

The issue of moisture control and water drainage is complicated and highly dependent on the situation. The important point is to design and construct to shed or drain water to the exterior. In some cases it may be appropriate to direct water into the drainage plain whereas in others it may be appropriate to direct it over the top surface or some other way.

Q: Is the EPA changing its guidance on managing mold based on size of area requiring mitigation?

There are no current plans to change EPA's recommendations on mold mitigation in schools. EPA's current guidance can be found in the "[Mold Remediation in Schools and Commercial Buildings](#)" [hyperlink: http://www.epa.gov/mold/mold_remediation.html] document.

Q: There was a mention of reduced pest management costs, but I really didn't see the context explained. Was this in terms of moisture and pests such as in kitchens and cockroaches? IPM should first focus on outcomes as often the cost of pest management services is low bid oriented.

Our inspections as a whole do reduce pest management cost by providing input to schools and occupants on managing their environment. We encourage reducing clutter, cleaning up foods and spills right away, and eliminate store of unsealed food in the classroom. We write reports and send them directly to the principal who advocates for us on the campus. The costs reduction is from reduced pest management labor and material costs. Good pest management and IAQ should result in fewer student and employee absences.

Q: In a room or area where it is impossible, due to budget constraints or other reasons, to seal sources of air leakage and in-turn mold growth; would putting in place dehumidifiers be a suggested cost effective method for reducing moisture in a regularly occupied area?

We have had to use portable dehumidifiers for short term fixes. Along with that the dehumidifier, we also added UV lights to the AHU.

Q: Any policy or guidelines with respect to carpeting in heavy foot traffic areas?

Different scenarios may require different approaches. Peggy Caruso likes using VCTT – Power Bond Flooring – it is a non-flow through flooring with bonded seams in a six foot roll. The tufted surface catches particulates and keeps the air cleaner. There is another similar product used at door entries for walk-offs. The secondary schools are better served with a vinyl flooring or tile, because the kids are bigger and the area to be cleaned is much larger.

Q: These little room dehumidifiers- very expensive to run. Would it be more efficient to install a commercial grade dehumidifier system to cover more areas?

The efficiency of a room dehumidifier versus a whole building dehumidification system is dependent on the situation including the amount of space that needs to be treated, the climate conditions of the area, time of use, etc. Professional consultation may be needed to make a determination on the best system for an individual space.